



Temporal and spatial variation of heat-related illness using 911 medical dispatch data

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Year: 2009
Journal: Environmental Research. 109 (5): 600-606

Abstract:

BACKGROUND: The adverse effect of hot weather on health in urban communities is of increasing public health concern, particularly given trends in climate change. **OBJECTIVES:** To demonstrate the potential public health applications of monitoring 911 medical dispatch data for heat-related illness (HRI), using historical data for the summer periods (June 1-August 31) during 2002-2005 in Toronto, Ontario, Canada. **METHODS:** The temporal distribution of the medical dispatch calls was described in relation to a current early warning system and emergency department data from the National Ambulatory Care Reporting System (NACRS). Geospatial methods were used to map the percentage of heat-related calls in each Toronto neighborhood over the study period. **RESULTS:** The temporal pattern of 911 calls for HRI was similar, and sometimes peaked earlier, than current heat health warning systems (HHWS). The pattern of calls was similar to NACRS HRI visits, with the exception of 2005 where 911 calls peaked earlier. Areas of the city with a relatively higher burden of HRI included low income inner-city neighborhoods, areas with high rates of street-involved individuals, and areas along the waterfront which include summer outdoor recreational activities. **CONCLUSIONS:** Identifying the temporal trends and geospatial patterns of these important environmental health events has the potential to direct targeted public health interventions to mitigate associated morbidity and mortality.

Source: <http://dx.doi.org/10.1016/j.envres.2009.03.011>

Resource Description

Early Warning System:

resource focus on systems used to warn populations of high temperatures, extreme weather, or other elements of climate change to prevent harm to health

A focus of content

Exposure :

weather or climate related pathway by which climate change affects health

Temperature

Temperature: Extreme Heat

Geographic Feature:

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resource focuses on specific type of geography

Freshwater, Urban

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Non-U.S. North America

Health Impact:

specification of health effect or disease related to climate change exposure

Injury, Other Health Impact

Other Health Impact: heat-related illnesses; heat stroke; sun stroke; heat syncope; heat cramp; heat exhaustion; heat fatigue; heat oedema

Intervention:

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Population of Concern: A focus of content

Population of Concern:

populations at particular risk or vulnerability to climate change impacts

Low Socioeconomic Status

Resource Type:

format or standard characteristic of resource

Research Article

Resilience:

capacity of an individual, community, or institution to dynamically and effectively respond or adapt to shifting climate impact circumstances while continuing to function

A focus of content

Timescale:

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment:

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resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content